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August 12, 2003

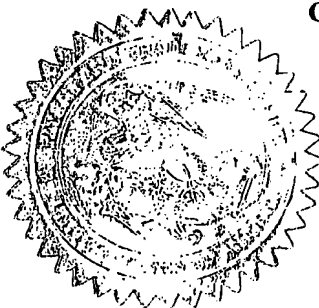
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OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT
APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A
FILING DATE.

APPLICATION NUMBER: 60/395,042

FILING DATE: July 11, 2002

RELATED PCT APPLICATION NUMBER: PCT/US03/21058

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS



L. Edelen

L. EDELEN
Certifying Officer

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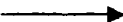
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

Express Mail Label No. EL 759993433 US

INVENTOR(S)					
Given Name (first and middle [if any])		Family Name or Surname		Residence (City and either State or Foreign Country)	
John Alan		Gervais		Carmel, Indiana (USA)	
Rex Irvin		Beard		Carmel, Indiana (USA)	
Mark Ryan		Mayernick		Carmel, Indiana (USA)	
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
APPLICATION LEVEL GATEWAY AND RULESET DOWNLOAD VALIDATION					
CORRESPONDENCE ADDRESS					
Direct all correspondence to:					
<input type="checkbox"/> Customer Number <input type="text"/>  <div>Place Customer Number Bar Code Label here</div>					
OR <input type="checkbox"/> Type Customer Number here					
<input checked="" type="checkbox"/> Firm or Individual Name		JOSEPH S. TRIPOLI, THOMSON MULTIMEDIA LICENSING INC.			
Address		PATENT OPERATIONS.			
Address		P. O. BOX 5312			
City		PRINCETON	State	NJ	ZIP 08543-5312
Country		USA	Telephone	609-734-9444	Fax 609-734-9700
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification Number of Pages		2	<input type="checkbox"/> CD(s), Number <input type="text"/>		
<input checked="" type="checkbox"/> Drawing(s) Number of Sheets		2	<input type="checkbox"/> Other (specify) <input type="text"/>		
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.					
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees					
<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 07-0832					
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
FILING FEE AMOUNT (\$)					
160					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

SIGNATURE

Date

7/11/02

TYPED or PRINTED NAME

Ronald H. Kurdyla

REGISTRATION NO.

26,932

(if appropriate)

Docket Number:

PU020335

TELEPHONE 609 734-9701

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

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FEE TRANSMITTAL for FY 2002

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METHOD OF PAYMENT (check one)		FEE CALCULATION (continued)																																																																																																																																																		
1. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any over payments to: Deposit Account Number: 07-0832 Deposit Account Name: THOMSON multimedia Licensing Inc. <input checked="" type="checkbox"/> Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17 <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		3. ADDITIONAL FEES <table border="1"> <thead> <tr> <th>Fee Code</th> <th>Large Entity Fee (\$)</th> <th>Small Entity Fee (\$)</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr><td>105</td><td>130</td><td>205</td><td>65</td><td></td></tr> <tr><td>127</td><td>50</td><td>227</td><td>25</td><td></td></tr> <tr><td>139</td><td>130</td><td>130</td><td>130</td><td></td></tr> <tr><td>147</td><td>2,520</td><td>147</td><td>2,520</td><td></td></tr> <tr><td>112</td><td>920*</td><td>112</td><td>920*</td><td></td></tr> <tr><td>113</td><td>1,840*</td><td>113</td><td>1,840*</td><td></td></tr> <tr><td>115</td><td>110</td><td>215</td><td>55</td><td></td></tr> <tr><td>116</td><td>400</td><td>216</td><td>200</td><td></td></tr> <tr><td>117</td><td>920</td><td>217</td><td>460</td><td></td></tr> <tr><td>118</td><td>1,440</td><td>218</td><td>720</td><td></td></tr> <tr><td>128</td><td>1,960</td><td>228</td><td>980</td><td></td></tr> <tr><td>119</td><td>320</td><td>219</td><td>160</td><td></td></tr> <tr><td>120</td><td>320</td><td>220</td><td>160</td><td></td></tr> <tr><td>121</td><td>280</td><td>221</td><td>140</td><td></td></tr> <tr><td>138</td><td>1,510</td><td>138</td><td>1,510</td><td></td></tr> <tr><td>140</td><td>110</td><td>240</td><td>55</td><td></td></tr> <tr><td>141</td><td>1,280</td><td>241</td><td>640</td><td></td></tr> <tr><td>142</td><td>1,280</td><td>242</td><td>640</td><td></td></tr> <tr><td>143</td><td>460</td><td>243</td><td>230</td><td></td></tr> <tr><td>144</td><td>620</td><td>244</td><td>310</td><td></td></tr> <tr><td>122</td><td>130</td><td>122</td><td>130</td><td></td></tr> <tr><td>123</td><td>50</td><td>123</td><td>50</td><td></td></tr> <tr><td>120</td><td>180</td><td>120</td><td>180</td><td></td></tr> <tr><td>581</td><td>40</td><td>581</td><td>40</td><td></td></tr> <tr><td>146</td><td>740</td><td>246</td><td>370</td><td></td></tr> <tr><td>149</td><td>740</td><td>249</td><td>370</td><td></td></tr> <tr><td>179</td><td>740</td><td>279</td><td>370</td><td></td></tr> <tr><td>169</td><td>900</td><td>169</td><td>900</td><td></td></tr> </tbody> </table>		Fee Code	Large Entity Fee (\$)	Small Entity Fee (\$)	Fee Description	Fee Paid	105	130	205	65		127	50	227	25		139	130	130	130		147	2,520	147	2,520		112	920*	112	920*		113	1,840*	113	1,840*		115	110	215	55		116	400	216	200		117	920	217	460		118	1,440	218	720		128	1,960	228	980		119	320	219	160		120	320	220	160		121	280	221	140		138	1,510	138	1,510		140	110	240	55		141	1,280	241	640		142	1,280	242	640		143	460	243	230		144	620	244	310		122	130	122	130		123	50	123	50		120	180	120	180		581	40	581	40		146	740	246	370		149	740	249	370		179	740	279	370		169	900	169	900	
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SUBMITTED BY		Complete (if applicable)	
Name (Print/Type)	Ronald H. Kurylo	Registration No. Attorney/Agent	26,932
Signature		Telephone	809.734.9701
		Date	July 11, 2002

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APPLICATION LEVEL GATEWAY AND RULESET DOWNLOAD VALIDATION

It is important to validate that an Application Level Gateway (ALG) or Firewall Ruleset is compatible with a modem or similar device prior to its execution or use on that device. Failure to do so can cause the unit to crash or hang if an attempt is made to use an incompatible ALG or Ruleset. Compatibility must be certain with not only the device hardware, but also the device software and general configuration.

Field upgradeable products are becoming more prevalent in the market today. Devices can have ALGs and/or Firewall Rulesets downloaded remotely to them while in the customer's home. This feature places the unit at higher risk to an invalid ALG or Ruleset download since the failure mechanism caused by an invalid ALG or Ruleset may place the device in a non-remote manageable state. This can result in having to recall the unit for repair.

The invention is a method for validating the compatibility of an ALG or Firewall Ruleset on a receiving device prior to its use. If the validation algorithm indicates the ALG or Ruleset is not compatible with the hardware or software configuration of a device, it can be safely rejected. This will prevent a possible non-recoverable error condition which might exist if an attempt is made to use a non-compatible ALG or Ruleset.

The algorithm consists of attaching or otherwise embedding in a predictable location on the ALG or Ruleset information regarding the hardware family, software version range and general product configuration with which this ALG or Ruleset is compatible. This can be done by means of attaching a header or trailer on the ALG or Ruleset file. From this point on this compatibility data will be referred to as the *header*.

Specifically the algorithm validates the following parameters associated with the ALG or Firewall Ruleset:

- Information Version
- Size
- CRC
- Signature
- Compatible Hardware Version Family
- Compatible Software Version Family

The discrimination items above are discussed in the paragraphs below.

The first item to validate is a version number of the information describing the ALG or Firewall Ruleset file. If the software performing this discrimination is not familiar with this format of information, it may look in the incorrect location for key information or misinterpret

information in the ALG or Ruleset's header. If the Information Version is not known by the discrimination algorithm, the ALG or Ruleset must be rejected.

If the ALG or Firewall Ruleset is too large to store in memory (typically non-volatile), it must be rejected as non-compatible. Failure to do this might result in a truncated file or a overrun into memory not allocated for its storage.

Next, a Cyclic Redundancy Check (CRC) is performed on the header information so as to validate the information is correct. This is done after the length and version are examined so as to insure the CRC value and the length over which the CRC is performed are correct. Although the probability of finding a valid CRC in an incorrect location in the header or by performing the CRC algorithm over an incorrect length is remote, this is considered more prudent. If the CRC fails, the ALG or Firewall Ruleset must be rejected.

If a cryptography signature is present in the file, it must now be validated. This will insure the ALG or Firewall Ruleset file is from a trusted source. If the source of the ALG or Ruleset cannot be validated, it must be rejected.

Next the ALG or Ruleset header should contain a list or range of compatible hardware version(s). If upon examination the hardware version of the device on which the ALG or Ruleset is to be executed is not within this range/list, it must be rejected.

Finally the ALG or Ruleset header should contain a list or range of compatible software version(s). If upon examination the software version of the device on which the ALG or Ruleset is to be executed is not within this range/list, it must be rejected.

Additional discriminations can be interspersed into the above as necessary. If all discriminations accept the ALG or Ruleset, it may be used on the device without risk. This is contingent on the validity of the information in its header.

Figure 1 is a block diagram of a cable modem including a BCM3345 Cable Modem integrated circuit processor, suitable for employing the method of the invention.

Figure 2 shows the cable modem of Figure 1 connected to the Internet, to a home network including multiple PCs via an Ethernet port, and to an individual PC via a USB port.

Hardware Block Diagram

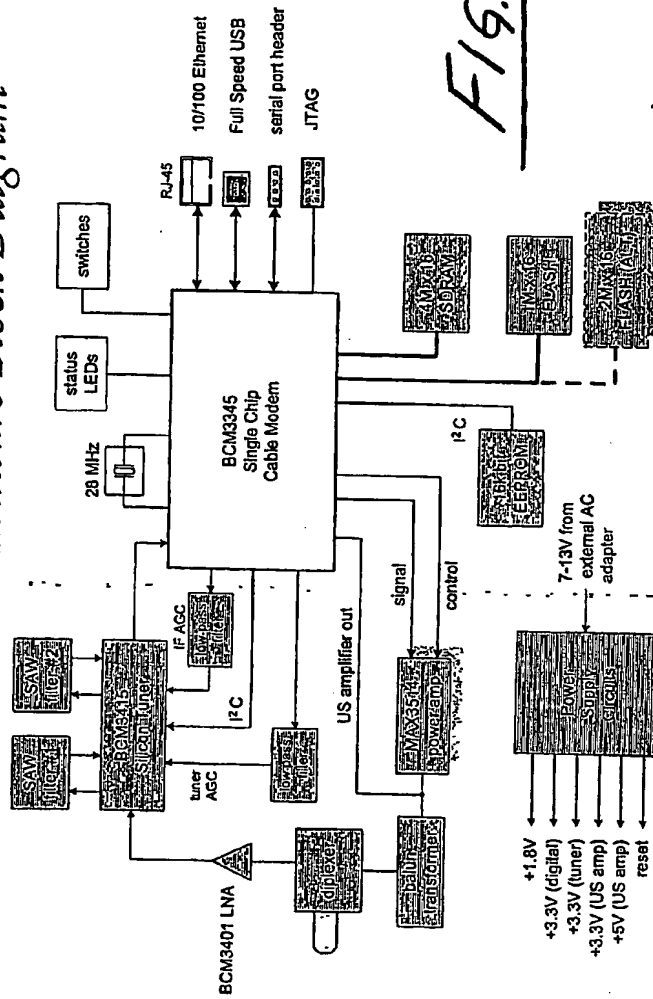


Fig. 1

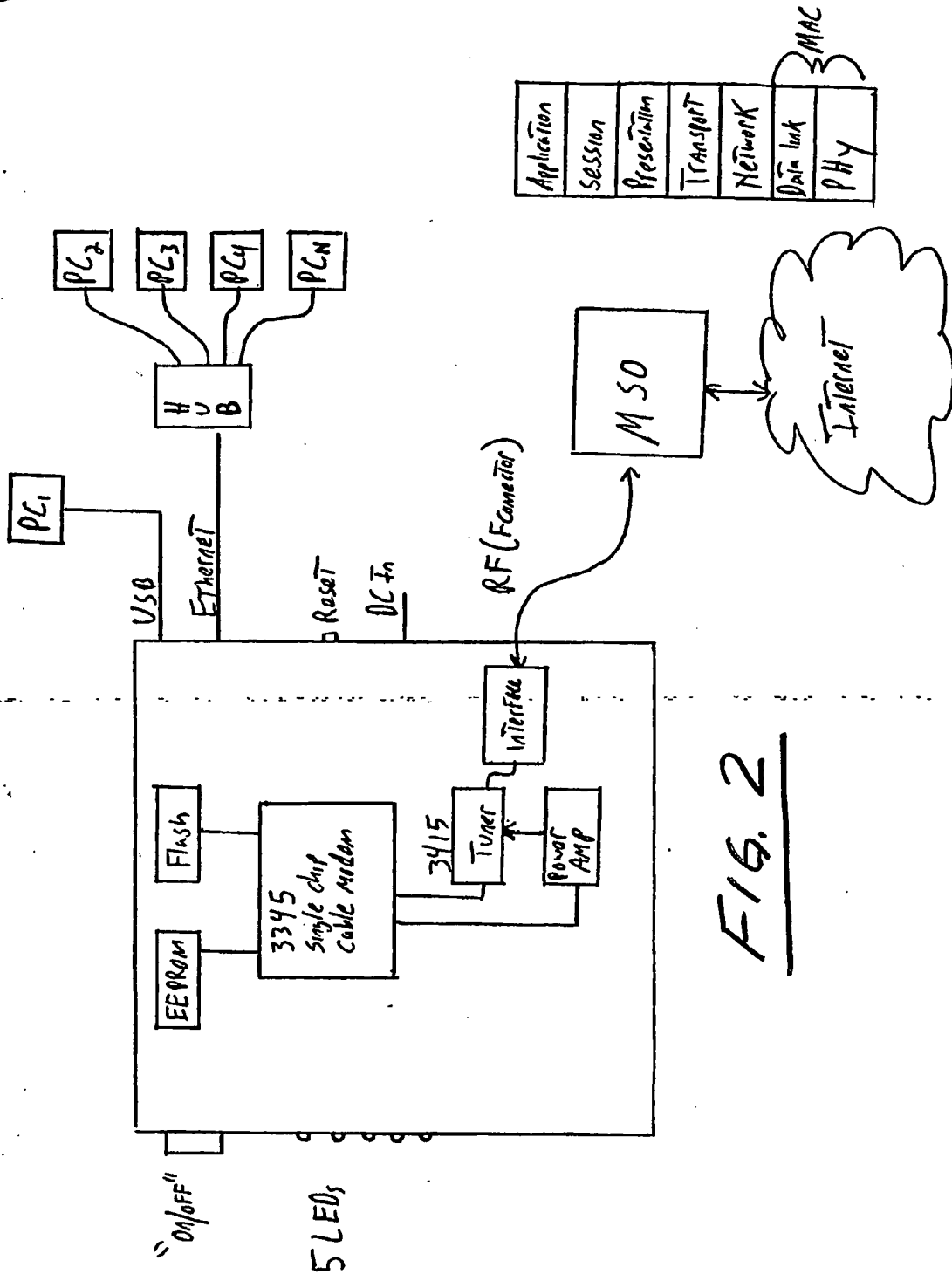


FIG. 2